

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NK1/0999-03	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International Application No. <b>PCT/SG2003/000293</b>	International Filing Date (day/month/year) 26 December 2003	Priority Date (day/month/year) 26 December 2003
International Patent Classification (IPC) or national classification and IPC Int. Cl. <b>H04B 7/26 (2006.01) H04L 29/06 (2006.01) H04Q 7/20 (2006.01)</b>		
Applicant <b>FRONTIER INTEGRATED TECHNOLOGY PTE LTD et al</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.  2. This REPORT consists of a total of 6 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of sheet(s).	
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application	

Date of submission of the demand 25 July 2005	Date of completion of the report 14 February 2006
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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SG2003/000293

**I. Basis of the report**

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☐ the description,      pages      , as originally filed,  
                                 pages      , filed with the demand,  
                                 pages      , received on      with the letter of
- ☐ the claims,      pages      , as originally filed,  
                                 pages      , as amended (together with any statement) under Article 19,  
                                 pages      , filed with the demand,  
                                 pages      , received on      with the letter of
- ☐ the drawings,      pages      , as originally filed,  
                                 pages      , filed with the demand,  
                                 pages      , received on      with the letter of
- ☐ the sequence listing part of the description:  
                                 pages      , as originally filed  
                                 pages      , filed with the demand  
                                 pages      , received on      with the letter of

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description,      pages
- ☐ the claims,      Nos.
- ☐ the drawings,      sheets/Fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SG2003/000293

## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be nonobvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 3 to 11, 25 and 26

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☒ the claims, or said claims Nos. 25 and 26 are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claim Nos. 3 to 11

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

Claims 1, 2, 12 to 15 (depending from claim 1) relate to a packet format and a method using that format including a list of neighbouring devices and corresponding timeslots.

Claims 16 to 24 relate to a protocol for dynamically expanding a network without any reference to neighbouring devices or corresponding timeslots. The protocol includes a number of states sleep, wake up, scan, listen, normal and network. In the normal state a device is allocated a timeslot without being synchronised to other devices and transmits in alternate of its timeslots.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1, 2, and 12 to 24

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims 17 to 22	YES
	Claims 1, 2, 12 to 16, 23 and 24	NO
Inventive step (IS)	Claims 1, 2, and 12 to 24	YES
	Claims None	NO
Industrial applicability (IA)	Claims 1, 2, and 12 to 24	YES
	Claims None	NO

**2. Citations and explanations (Rule 70.7)**

The associated international search report cites the following documents:

D1 – US 5719868 A (YOUNG) 17 February 1998

D2 – US 6317436 B1 (YOUNG et al) 13 November 2001

The examiner is obliged to consider whether the claimed monopoly encompasses material that lacks novelty or inventive step. This means that the statements here relate to the claimed monopoly and not necessarily to the invention described within the description.

The time constraints of the PCT precluded further Written Opinions being issued.

Novelty

Claims 1, 2, 12 to 16, 23 and 24 lack novelty in light of D1 or D2. A device (node) transmits its unique identification together with its transmit and receiver slot pairs and a neighbourhood list. Likewise, destination, network list, data and checksum are transmitted. Document D1 does not explicitly state any timer and so claims 17 to 22 are novel.

Inventive Step

Claims 1, 2 and 12 to 24 define an invention lacking an inventive step in light of D1 or D2. Claims 1, 2, 12 to 16, 23 and 24 follow from novelty above. The use of timers to limit states is common general knowledge and so renders claims 17 to 22 lacking an inventive step.

If necessary D1 and D2 are considered documents that a person skilled in the art would obviously combine.

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 1 lacks descriptive support. The description requires that the timeslot field identify the timeslot used by a transmitting device for receiving a transmission. Perhaps the intentions are better expressed by line 9 being amended to read "... device for receiving a transmission ..."?

Claim 12 includes "predetermined logical search strategy". Inherently "logical search strategy" is indefinite in that it does not express the actual search strategy. This means that the adjective "predetermined" cannot be interpreted as merely an indefinite search strategy because it must be given some work to do. Therefore, it should be interpreted as being the search strategy specifically stated in the description. Perhaps the intentions are better expressed by the deletion of "predetermined"?